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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/886,771	06/21/2001	Paul S. Bradley	15-769 - 4254	6135

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EXAMINER
ZICHT, PATRICIA C

ART UNIT	PAPER NUMBER
2164	

DATE MAILED: 05/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/886,771	BRADLEY ET AL.
	Examiner	Art Unit	
	Patricia C. Zicht	2164	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-31_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-31_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _21 June 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

SAM RIMELL
PRIMARY EXAMINER

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Remarks

1.   In response to communications filed on January 25, 2005, claims 1-31 stand

rejected and are presently pending in the application.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3.   Claims 1-31 are rejected under 35 U.S.C. 102(b) as being anticipated by <u>Fayyad</u>

<u>et al.</u> (PCT Pub No. WO 99/62007).

As to claim 1, <u>Fayyad et al.</u> teaches a method for clustering data in a database

comprising:

a) providing a database having a number of data records having both discrete

and continuous attributes (see page 7, lines 4-6);

b) grouping together data records from the database which have specified

discrete attribute configurations (see page 8, lines 5 through page 9, lines 1-13; and

see Table 1 and "Cluster Attribute/Value Probability Tables");

c) clustering data records having the same or similar specified discrete attribute

configuration based on the continuous attributes to produce an intermediate set of

data clusters (see page 11, line 42 through page 12, line 32); and

d) merging together clusters from the intermediate set of data clusters to produce

a clustering model (see page 14, lines 26-28; and see figures 8A-8D).

As to claims 2, 9, and 23, <u>Fayyad et al.</u> teaches wherein the clustering model

includes a table of probabilities for the discrete data attributes of the data records for

a cluster and wherein the cluster model for continuous data attributes comprises a

mean and a covariance for each cluster lines (see claim 1b).

As to claims 3, 14, and 24, <u>Fayyad et al.</u> teaches wherein the process of merging

of intermediate clusters is ended when a specified number of clusters has been

formed (see page 8, lines 12-14, where "specified number of clusters" is read on

"initial cluster number K=3"; and see claim 14, where "specified number of clusters"

is read on "K clusters").

As to claims 4 and 25, <u>Fayyad et al.</u> teaches wherein the step of merging of

intermediate clusters is ended when a distance between intermediate clusters is

greater than a specified minimum distance (see page 27, line 12 through page 28,

line 26, where "distance between intermediate clusters" is read on "stopping criteria"

and "specified minimum distance" is read on "the sum of these two numbers" and

"the sum of these numbers").

As to claims 5 and 26, <u>Fayyad et al.</u> teaches wherein the discrete attributes are

Boolean and similarity between configurations is based on a distance between bit

patterns of the discrete attributes (see page 33 where "Boolean" and "bit patterns" is

read on "0/1 assignments").

As to claims 6 and 20, <u>Fayyad et al.</u> teaches wherein one or more of the discrete

attributes have more than two possible values and comprising the step of

subdividing a discrete attribute having more than two possible values into multiple

Boolean value attributes (see page 33 where "Boolean" and "two possible values" is

read on "0/1 assignments").

As to claims 7 and 27, <u>Fayyad et al.</u> teaches wherein the step of identifying

configurations includes tabulating data records having the same discrete attribute bit

pattern and combining the data records from similar configurations before clustering

the data records so tabulated based on the continuous attributes (see page 33

where "bit pattern" is read on "0/1 assignments).

As to claim 8, <u>Fayyad et al.</u> teaches a method for clustering data in a database

comprising:

a) providing a database having a number of data records having both discrete

and continuous attributes (see page 14, line 32 through page 15, line 2);

b) counting data records from the database which have the same discrete

attribute configuration and identifying a first set of configurations wherein the number

of data records of each configuration of the first set of configurations exceeds a

threshold number of data records (see page 15, line 21 through page 16, line 15,

where "counting data records" is read on "counting the number of data records" and

"exceeds a threshold number of data records" is read on "stopping criteria");

c) adding data records from the database not belonging to one of the first set of

configurations with a configuration within the first set of configurations to produce a

subset of records from the database belonging to configurations in the first set of

configurations (see page 15, lines 12-18, where "subset of records" is read on

"compressed data"); and

d) clustering the subset of records contained within at least some of the first set

of configurations based on the continuous data attributes of records contained within

that first set of configurations to produce a clustering model (see page 15, lines 19-

27, where "continuous data attributes" is read on "ordered attributes").

As to claim 10, Fayyad et al. teaches wherein an added record not contained

within the first set of configurations is added to one of the first set of configurations

based on a distance between a smaller configuration to which the added record

belongs during counting of records in different configurations (see page 15, line 24-

25, where "counting" is read on "'M' counting").

As to claims 11 and 28, <u>Fayyad et al.</u> teaches wherein the clustering of records

from a configuration based on continuous data attributes results in a variable

number of clusters for each configuration based on the number of records in the

configuration (see page 15, lines 19-32, where "continuous data attributes" is read

on "ordered attributes"; and where "variable number of clusters" is read on "scalable

clustering process").

As to claim 12, <u>Fayyad et al.</u> teaches wherein the clustering of records from

records falling within a configuration of the first set results in a number of

intermediate clusters which are merged together to form the cluster model (see page

18, lines 23-31, where "records falling with a configuration" is read on "data points

falling within a given cluster").

As to claim 13, <u>Fayyad et al.</u> teaches wherein intermediate clusters are merged

together based on a distance between clusters that is determined based on both

continuous and discrete attributes of the intermediate clusters (see page 4, line 20

through page 5, line 4, where "clusters are merged" is read on "membership of a

given record in a particular cluster"; and see page 19, lines 1-7, where "distance

between clusters" is read on "sufficiently 'close' to an existing CS subcluster").

As to claim 15, <u>Fayyad et al.</u> teaches wherein the merging of intermediate

clusters is performed until a distance between two closest clusters is greater than a

threshold distance (see page 19, line 25 through page 20, line 2).

As to claims 16 and 29, <u>Fayyad et al.</u> teaches wherein a list of records of each

configuration in the first set of configurations is maintained as data records are

accessed from the database (see page 8, lines 5 through page 9, lines 1-13; and

see Table 1 and "Cluster Attribute/Value Probability Tables").

As to claims 17 and 30, <u>Fayyad et al.</u> teaches where the clustering based on the

continuous attributes of records within a configuration is performed using

expectation maximization clustering of the continuous attributes (see page 4, line 20

through page 5, line 4).

As to claim 18, <u>Fayyad et al.</u> teaches a data processing system comprising:

a) a storage medium for storing a database having a number of data records

having both discrete and continuous attributes (see page 7, lines 4-9);

b) a computer for evaluating data records from the database and building a

clustering model that describes data in the database (see page 7, lines 1-5); and

c) a database management system including a component for selectively

retrieving data records from the database for evaluation by the computer (see page

7, lines 9-11, where "retrieving data records" is read on "brings data from the database");

For the remaining steps of this claim, the applicant is directed to remarks and discussions made in claim 1 above.

As to claim 19, Fayyad et al. teaches wherein the computer includes a rapid access storage for maintaining a list of data records from the database for data records having a specified discrete attribute configuration to facilitate clustering of the data records based on their continuous attributes (see page 5, lines 5-8).

As to claim 21, Fayyad et al. teaches wherein the rapid access storage of the computer includes a data structure for storing a clustering model (see figures 8A-8D).

As to claim 22, Fayyad et al. teaches a computer readable medium containing stored instructions for clustering data in a database comprising instructions for (see page 7, lines 1-11):

a) reading records from a database having a number of data records having both discrete and continuous attributes (see page 7, lines 4-11, where "reading records" is read on "brings data from the database");

For the remaining steps of this claim, the applicant is directed to remarks and discussions made in claim 1 above.

As to claim 31, <u>Fayyad et al.</u> teaches where records are assigned to a single

cluster during the expectation maximization clustering process (see page 4, lines 26-

31; and see claim 24).

Response to Arguments

4.   Applicant's arguments filed on 25-January-2005 with regard to the common

ownership have been fully considered but the question of common ownership is moot

because the rejection is a statutory bar (102b) and cannot be over come except by

amendment.

Conclusion

5.   THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

6.   Any inquiries concerning this communication or earlier communications from the

examiner should be directed to Patricia C. Zicht, whose telephone number is (571) 272-

5866. The examiner can normally be reached on Mondays-Fridays from 08:30 am to

05:00 pm.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Dov Popovici, can be reached at (571) 272-4083.

pcz

April 29, 2005

                                                                    SAM RIMELL
                                                                    PRIMARY EXAMINER